

REMARKS

This Amendment is submitted in response to the Office Action dated April 21, 2003, having a shortened statutory period set to expire July 21, 2003. Claims 1-34 are pending. No claims have been amended or canceled. Applicants have amended the specification. No new matter has been entered by these amendments.

I. Examiner Interview

Applicant appreciates the Examiner's time spent on a teleconference with Applicant's counsel on August 19, 2003. During that interview, Applicant's counsel summarized Applicant's response to the rejection of Claims 1-34 under Section 103; specifically, the application of the Overton reference to the elements of Claim 1.

II. Amendments to the Specification

Applicants have amended the specification to correct administrative errors that inadvertently left the deleted parentheticals in the filed application. No new matter has been introduced by these amendments.

III. Claim Rejections -- 35 U.S.C. § 103

In section 2 of the present Office Action, Claims 1-5, 8, 18-30, 32, and 34 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Overton* in view of *Lehman* ("*Lehman*"). Also, in Section 14 of the present Office Action, Claims 13, 17, and 33 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Overton* in view of *Lehman*, as applied to Claim 1 above, and further in view of *Waight*. Those rejections are respectfully traversed and reconsideration of the claims is requested.

A. Overton fails to suggest "a plurality of up-converters"

With respect to exemplary Claim 1, therein is recited, *inter alia*:

a plurality of up-converter mixers, each mixing the up-converter LO signal with a corresponding one of the plurality of combined channel signals and providing a corresponding one of a plurality of intermediate frequency (IF) signals....

Overton either taken alone or in combination with *Lehman* fails to disclose or suggest such a plurality of up-converter mixers. *Overton* shows an Intermediate Frequency (IF) mixer 22 that mixes a baseband combined waveform output from a summing circuit 20 with a local reference signal generated from an IF local oscillator 24 to up-convert the baseband combined waveform to an IF signal (see *Overton*, column 4, lines 61-67). *Overton* either taken alone or in combination with *Lehman* does not disclose or suggest mixing the local reference signal supplied by the local oscillator with a “plurality of combined channel signals” utilizing a “plurality of up-converter mixers” to provide a “plurality of Intermediate Frequency (IF) signals” as recited in Claim 1. Moreover, there is no suggestion within the teachings of *Overton* and *Lehman* that would make it obvious to someone skilled in the art to modify *Overton* by using the local reference signal supplied by the local oscillator 24 with a plurality of IF mixers 22 to realize the space and power savings provided by the present invention.

B. Overton and Lehman fail to suggest a “down-converter”

Independent Claims 1, 26, and 28 each recite elements or steps to down-convert the IF signals. *Overton* and *Lehman* fail to suggest such a “down-converter.” Because *Overton* and *Lehman* are applicable only to cellular systems operating at high frequencies (e.g., 900MHz), the IF signals in these systems are up-converted prior to RF transmission, and not down-converted as claimed (see *Overton*, column 5, lines 1-6 and *Lehman*, column 17, lines 54-57). Specifically, *Overton* and *Lehman* do not show or suggest “a plurality of down-converter mixers” as recited in Claim 1, “a down-converter mixer” as recited in Claim 28, and “mixing each of the plurality of down-converter LO signals with a corresponding one of the plurality of filtered signals” as recited in Claim 28.

IV. Summary

For the reasons given above, Applicant respectfully submits that *Overton* either taken alone or in combination with *Lehman* fails to disclose or suggest independent Claims 1, 26, and 28 and that the rejection of those claims under Section 103 should be withdrawn. Specifically, the prior art fails to suggest the elements of:

a plurality of up-converter mixers, each mixing the up-converter LO signal with a corresponding one of the plurality of combined channel signals and providing a corresponding one of a plurality of intermediate frequency (IF) signals;

a plurality of down-converter mixers, each mixing a corresponding one of the plurality of down-converter LO signals with a corresponding one of the plurality of filtered signals and providing a corresponding one of a plurality of radio frequency (RF) signals; and

as recited in Claim 1:

a down-converter mixer that mixes the down-converter LO signal with the filtered signal and that provides a first radio frequency (RF) signal; and

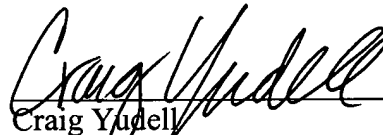
as recited in Claim 26, and the steps of:

mixing each of the plurality of combined channel signals with an up-converter local oscillator (LO) signal to provide a corresponding plurality of intermediate frequency (IF) signals;

mixing each of the plurality of down-converter LO signals with a corresponding one of the plurality of filtered signals to provide a corresponding plurality of radio frequency (RF) signals;

as recited in Claim 28. Similarly, for the reasons given above, Applicant respectfully submits that dependent 2-25, 27, 29- 34 are also not shown or suggested by *Overton*, *Lehman* or any combination thereof, and that the rejection of those claims under Section 103 should be withdrawn.

Respectfully submitted,



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